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TITLE : HOT ROLLED STEEL SHEET HAVING HIGH NOTCH FATIGUE STRENGTH AND ITS PRODUCTION

ABSTRACT : PURPOSE: To obtain the steel sheet suitable for a material for machine structural use to be subjected to repeated load, such as automobile wheel, by providing a specific chemical composition, forming a inversion reinforcing material, and reducing hardening index and fracture elongation, respectively.

CONSTITUTION: A slab of a steel having a composition consisting of, by weight, 0.01-0.10% C, $\leq 0.4\%$ Si, 0.5-2.0% Mn, $\leq 0.01\%$ sol.Al, further one or more kinds among $\leq 0.2\%$ Ti, $\leq 0.05\%$ Nb, and $\leq 0.05\%$ V, and the balance Fe is used. Directly after casting the steel slab or after reheating the steel slab up to $\geq 1100^{\circ}\text{C}$, hot rolling is completed under the conditions of an inlet temp. at the final pass in continuous hot rolling of A_1 to ($A_1-100^{\circ}\text{C}$) and a reduction of area of 5-20%. Then, the resulting plate is air-cooled and coiled at $550-650^{\circ}\text{C}$. By this method, the hot rolled steel plate where the average of work hardening index n-value at 5-15% strain is regulated to $\leq 0.18\%$ and which has $\leq 25\%$ fracture elongation and high notch fatigue strength can be obtained.

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